REMARKS

Claim Rejections - 35 U.S.C. §103

Claims 1-5, 14 and 15 are rejected under 35 USC §103(a) as being unpatentable over Beddingfield in view of Matsuda et al.

The present invention is not directed to a concept of recognizing a solder ball (solder bump) as a recognition mark. The present invention uses a metal posts as a recognition mark. The solder ball is completely different from a metal post when they are used as a recognition mark.

The solder ball is formed on a top of the metal post after the metal post is formed in the redistribution layer. The alignment mark is formed by a metal post, but the solder ball is not provided on the top of the alignment mark. Thus, the alignment mark is different from the solder ball or solder bump disclosed in the Beddingfield reference.

The reason for not providing a solder ball on the alignment mark is that it is difficult to accurately recognize the solder ball since 1) a solder ball has roundness, which is difficult to clearly focus thereon, and 2) solder balls have a relatively large variation in their shape, size (height) and gloss, which decreases recognition rate of the solder balls.

In view of the above-mentioned disadvantages of the solder ball when used as a recognition mark, the present invention suggests usage of a metal post as a recognition mark. Thus, the present invention solves the problem that a solder ball is not appropriate for a recognition mark.

The outstanding Office action has stated that "Beddingfield does not disclose a redistribution layer having a plurality of electrode pads and electrical conductive patterns connecting the electrodes of the semiconductor element to the respective electrode pads." The Applicant agrees with this Office assessed shortcoming of Beddingfield.

It should be noted that this is not the only shortcoming of Beddingfield. In the outstanding Office action, the Office has equated I/O bump 108 to be a metal post. As shown in Figure 8 regarding I/O bump 108 and Figure 1, I/O bump 18, they are nothing more than a solder ball to be melted upon actual use.

In contradistinction, in the present invention, as shown by way of an example in Figure 2 and associated written description, metal post 16 is situated below solder ball 22. Therefore, metal post 16 is not a solder ball and it would not melt upon ordinary usage. To ensure this patentably distinguishing feature is accurately reflected in the claims, the claim language has been appropriately amended to recite wherein the metal post has a flat top surface and wherein the metal post would not melt upon ordinary usage.

By so amending, the claimed invention is patentably distinguished over the asserted prior art. All claims dependent thereon, by virtue of inherency, are also patentably distinguished over the asserted prior art.

Reconsideration and withdrawal of this rejection are respectfully requested.

Allowable Subject Matter

The allowance of claim 13 is noted with appreciation.

CONCLUSION

In view of the aforementioned amendments and accompanying remarks, all pending claims are believed to be in condition for allowance, which action, at an early date, is requested.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 50-2866.

Respectfully Submitted,

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